

## SEQUENCE LISTING

<110> Gaiger, Alexander
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 Boydston, Jeremy

<130> 210121.465C6

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<141> 2001-10-30

<150> 09/938,864

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<150> 09/785,019

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| 1        | •        | _                            | _           | 5        |       |     |     |     | 10        |     |     |     |     | 15        |  |    |
|          | <;<br><; |                              |             | muso     | culus | 6   |     |     |           |     |     |     |     |           |  |    |
| CCC      |          | 400><br>tgc a                | 21<br>aataa | agaga    | at a  |     |     |     |           |     |     |     |     |           |  | 21 |
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| atgi     |          | 400><br>gat (                | 22<br>ggcgg | gacca    | aa t  |     |     |     |           |     |     |     |     |           |  | 21 |
|          | <;<br><; |                              |             | sap      | oien  |     |     |     |           |     |     |     |     |           |  |    |
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Asn Met Thr Lys Leu His Val Ala Leu
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Asn Gln Met Asn Leu Gly Ala Thr Leu
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Pro Gly Ala Ser Ala Tyr Gly Ser Leu
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Gln Met Thr Ser Gln Leu Glu Cys Met
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Val Leu Asp Phe Ala Pro Pro Gly Ala
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Tyr Phe Lys Leu Ser His Leu Gln Met
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Tyr Gln Met Thr Ser Gln Leu Glu Cys
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Gly Ala Ala Gln Trp Ala
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Ala Ser Ala Tyr Gly Ser Leu Gly Gly Pro Ala Pro
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Ala Phe Thr Val His Phe Ser Gly Gln Phe Thr Gly Thr Ala Gly
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His Ala Ala Gln Phe
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Cys His Thr Pro Thr Asp Ser Cys Thr Gly Ser Gln Ala Leu Leu Leu
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Arg Thr Pro Tyr Ser Ser Asp Asn Leu Tyr Gln Met Thr Ser Gln Leu
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Arg Tyr Phe Lys
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Glu Arg Arg Phe Ser Arg Ser Asp Gln Leu Lys Arg His Gln
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Gln Arg Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr Arg Thr
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His Thr Gly Lys Thr Ser
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Met His Gln Arg Asn
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|            |            |              | 420        |                     |            |            |            | 425        |            |            |            |            | 430        |            |            |
|------------|------------|--------------|------------|---------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| Arg        | His        | His<br>435   | Asn        | Met                 | His        | Gln        | Arg<br>440 | Asn        | Met        | Thr        | Lys        | Leu<br>445 | Gln        | Leu        | Ala        |
| Leu        |            | 400          |            |                     |            |            | 440        |            |            |            |            | 113        |            |            |            |
|            |            |              |            |                     |            |            |            |            |            |            |            |            |            |            |            |
|            |            | 210>         |            |                     |            |            |            |            |            |            |            |            |            |            |            |
|            |            | 211><br>212> |            |                     |            |            |            |            |            |            |            |            |            |            |            |
|            | <213>      |              | Mus        | mus                 | culus      | 5          |            |            |            |            |            |            |            |            |            |
| <400>      |            | 320          |            |                     |            |            |            |            |            |            |            |            |            |            |            |
| Met<br>1   | Gly        | Ser          | Asp        | Val<br>5            | Arg        | Asp        | Leu        | Asn        | Ala<br>10  | Leu        | Leu        | Pro        | Ala        | Val<br>15  | Ser        |
|            |            |              | Gly<br>20  |                     |            |            |            | 25         |            |            |            |            | 30         |            |            |
| Gln        | Trp        | Ala<br>35    | Pro        | Val                 | Leu        | Asp        | Phe<br>40  | Ala        | Pro        | Pro        | Gly        | Ala<br>45  | Ser        | Ala        | Tyr        |
|            | 50         |              | Gly        | _                   |            | 55         |            |            |            |            | 60         |            |            |            |            |
| Pro<br>65  | Pro        | Pro          | Pro        | His                 | Ser<br>70  | Phe        | Ile        | Lys        | Gln        | Glu<br>75  | Pro        | Ser        | Trp        | Gly        | Gly<br>80  |
| Ala        | Glu        | Pro          | His        | Glu<br>85           | Glu        | Gln        | Суѕ        | Leu        | Ser<br>90  | Ala        | Phe        | Thr        | Leu        | His<br>95  | Phe        |
| Ser        | Gly        | Gln          | Phe<br>100 | Thr                 | Gly        | Thr        | Ala        | Gly<br>105 | Ala        | Суѕ        | Arg        | Tyr        | Gly<br>110 | Pro        | Phe        |
| Gly        | Pro        | Pro<br>115   | Pro        | Pro                 | Ser        | Gln        | Ala<br>120 | Ser        | Ser        | Gly        | Gln        | Ala<br>125 | Arg        | Met        | Phe        |
|            | 130        |              | Pro        |                     |            | 135        |            |            |            |            | 140        |            |            |            |            |
| Arg<br>145 | Asn        | Gln          | Gly        | Tyr                 | Ser<br>150 | Thr        | Val        | Thr        | Phe        | Asp<br>155 | Gly        | Ala        | Pro        | Ser        | Tyr<br>160 |
| Gly        | His        | Thr          | Pro        | Ser<br>165          | His        | His        | Ala        | Ala        | Gln<br>170 | Phe        | Pro        | Asn        | His        | Ser<br>175 | Phe        |
| Lys        | His        | Glu          | Asp<br>180 | Pro                 | Met        | Gly        | Gln        | Gln<br>185 | Gly        | Ser        | Leu        | Gly        | Glu<br>190 | Gln        | Gln        |
| Tyr        | Ser        | Val<br>195   | Pro        | Pro                 | Pro        | Val        | Tyr<br>200 | Gly        | Суѕ        | His        | Thr        | Pro<br>205 | Thr        | Asp        | Ser        |
| Cys        | Thr<br>210 | Gly          | Ser        | Gln                 | Ala        | Leu<br>215 | Leu        | Leu        | Arg        | Thr        | Pro<br>220 | Tyr        | Ser        | Ser        | Asp        |
| Asn<br>225 | Leu        | Tyr          | Gln        | Met                 | Thr<br>230 | Ser        | Gln        | Leu        | Glu        | Cys<br>235 | Met        | Thr        | Trp        | Asn        | Gln<br>240 |
| Met        | Asn        | Leu          | Gly        | Ala<br>2 <b>4</b> 5 | Thr        | Leu        | Lys        | Gly        | Met<br>250 | Ala        | Ala        | Gly        | Ser        | Ser<br>255 | Ser        |
| Ser        | Val        | Lys          | Trp<br>260 | Thr                 | Glu        | Gly        | Gln        | Ser<br>265 | Asn        | His        | Gly        | Ile        | Gly<br>270 | Tyr        | Glu        |
| Ser        | Asp        | Asn<br>275   | His        | Thr                 | Ala        | Pro        | Ile<br>280 | Leu        | Суѕ        | Gly        | Ala        | Gln<br>285 | Tyr        | Arg        | Ile        |
| His        | Thr<br>290 | His          | Gly        | Val                 | Phe        | Arg<br>295 | Gly        | Ile        | Gln        | Asp        | Val<br>300 | Arg        | Arg        | Val        | Ser        |
| Gly<br>305 |            | Ala          | Pro        | Thr                 | Leu<br>310 | Val        | Arg        | Ser        | Ala        | Ser<br>315 | Glu        | Thr        | Ser        | Glu        | Lys<br>320 |
| Arg        | Pro        | Phe          | Met        | Cys<br>325          | Ala        | Tyr        | Pro        | Gly        | Cys<br>330 | Asn        | Lys        | Arg        | Tyr        | Phe<br>335 | Lys        |

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Leu Ser His Leu Gln Met His Ser Arg Lys His Thr Gly Glu Lys Pro
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Tyr Gln Cys Asp Phe Lys Asp Cys Glu Arg Arg Phe Ser Arg Ser Asp
                            360
                                                 365
Gln Leu Lys Arg His Gln Arg Arg His Thr Gly Val Lys Pro Phe Gln
                        375
Cys Lys Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu Lys Thr
                    390
                                         395
His Thr Arg Thr His Thr Gly Lys Thr Ser Glu Lys Pro Phe Ser Cys
                                    410
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                                425
Arg His His Asn Met His Gln Arg Asn Met Thr Lys Leu His Val Ala
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gaccacctga agacccacac caggactcat acaggtgaaa agcccttcag ctgtcggtgg 1680
ccaagttgtc agaaaaagtt tgcccggtca gatgaattag tccgccatca caacatgcat 1740
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tgggctccgg ttctggactt cgcaccgccg ggtgcatccg catacggttc cctgggtggt 180
ceggeacege egeeggeace geeggeege egeeggeacte etteateaaa 240
caggaaccga gctggggtgg tgcagaaccg cacgaagaac agtgcctgag cgcattcacc 300
gttcacttct ccggccagtt cactggcaca gccggagcct gtcgctacgg gcccttcggt 360
cctcctccgc ccagccaggc gtcatccggc caggccagga tgtttcctaa cgcgccctac 420
ctgcccagct gcctcgagag ccagcccgct attcgcaatc agggttacag cacggtcacc 480
ttcgacggga cgcccagcta cggtcacacg ccctcgcacc atgcggcgca gttccccaac 540
cactcattca agcatgagga tcccatgggc cagcagggct cgctgggtga gcagcagtac 600
teggtgeege ecceggteta tggetgeeae acceecaceg acagetgeae eggeageeag 660
getttgetge tgaggaegee etacageagt gacaatttat accaaatgae ateccagett 720
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gatgtgcgac gtgtgcctgg agtagccccg actcttgtac ggtcggcatc tgagaccagt 180
gagaaacgcc ccttcatgtg tgcttaccca ggctgcaata agagatattt taagctgtcc 240
cacttacaga tgcacagcag gaagcacact ggtgagaaac cataccagtg tgacttcaag 300
gactgtgaac gaaggttttt tcgttcagac cagctcaaaa gacaccaaag gagacataca 360
ggtgtgaaac cattccagtg taaaacttgt cagcgaaagt tctcccggtc cgaccacctg 420
aagacccaca ccaggactca tacaggtgaa aagcccttca gctgtcggtg gccaagttgt 480
cagaaaaagt ttgcccggtc agatgaatta gtccgccatc acaacatgca tcagagaaac 540
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Thr Asp Asp Ser Phe Asp Thr Asp Val Leu Lys Ala Asp Gly Ala Ile
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             20
                                 25
Leu Val Asp Phe Trp Ala Glu Trp Cys Gly Pro Cys Lys Met Ile Ala
                             40
Pro Ile Leu Asp Glu Ile Ala Asp Glu Tyr Gln Gly Lys Leu Thr Val
     50
                         55
                                             60
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Ala Lys Leu Asn Ile Asp Gln Asn Pro Gly Thr Ala Pro Lys Tyr Gly
Ile Arg Gly Ile Pro Thr Leu Leu Phe Lys Asn Gly Glu Val Ala
                                     90
                 85
Ala Thr Lys Val Gly Ala Leu Ser Lys Gly Gln Leu Lys Glu Phe Leu
                                105
           100
Asp Ala Asn Leu Ala Gly Ser Gly Ser Gly His Met Gln His His His
                            120
His His His Val Ser Ile Glu Gly Arg Ala Ser Ser Gly Gly Ser Gly
                        135
                                            140
Leu Val Pro Arg Gly Ser Ser Gly Ser Gly Asp Asp Asp Lys Ser
                    150
                                        155
Ser Arg His Ser Thr Gly Tyr Glu Ser Asp Asn His Thr Thr Pro Ile
                165
                                    170
Leu Cys Gly Ala Gln Tyr Arg Ile His Thr His Gly Val Phe Arg Gly
                                185
                                                    190
           180
Ile Gln Asp Val Arg Arg Val Pro Gly Val Ala Pro Thr Leu Val Arg
                            200
                                                205
Ser Ala Ser Glu Thr Ser Glu Lys Arg Pro Phe Met Cys Ala Tyr Pro
                        215
                                            220
Gly Cys Asn Lys Arg Tyr Phe Lys Leu Ser His Leu Gln Met His Ser
                    230
Arg Lys His Thr Gly Glu Lys Pro Tyr Gln Cys Asp Phe Lys Asp Cys
                                    250
                245
Glu Arg Arg Phe Phe Arg Ser Asp Gln Leu Lys Arg His Gln Arg Arg
                                265
His Thr Gly Val Lys Pro Phe Gln Cys Lys Thr Cys Gln Arg Lys Phe
                            280
                                                285
Ser Arg Ser Asp His Leu Lys Thr His Thr Arg Thr His Thr Gly Glu
                        295
                                            300
Lys Pro Phe Ser Cys Arg Trp Pro Ser Cys Gln Lys Lys Phe Ala Arg
                   310
                                        315
Ser Asp Glu Leu Val Arg His His Asn Met His Gln Arg Asn Met Thr
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                                                        335
Lys Leu Gln Leu Ala Leu
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<212> PRT
<213> Homo sapiens
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<400> 333

 Met Gln His His His His His His His His Met Ser Asp Lys Ile His Leu

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 10
 15

 Thr Asp Asp Ser Phe Asp Thr Asp Val Leu Lys Ala Asp Gly Ala Ile
 20
 25

 Leu Val Asp Phe Trp Ala Glu Trp Cys Gly Pro Cys Lys Met Ile Ala
 30

 Pro Ile Leu Asp Glu Ile Ala Asp Glu Tyr Gln Gly Lys Leu Thr Val
 55

 Ala Lys Leu Asn Ile Asp Gln Asn Pro Gly Thr Ala Pro Lys Tyr Gly

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70
                                        75
Ile Arg Gly Ile Pro Thr Leu Leu Leu Phe Lys Asn Gly Glu Val Ala
                                   90
                85
Ala Thr Lys Val Gly Ala Leu Ser Lys Gly Gln Leu Lys Glu Phe Leu
                               105
Asp Ala Asn Leu Ala Gly Ser Gly Ser Gly His Met Gln His His His
                           120
His His His Val Ser Ile Glu Gly Arg Ala Ser Ser Gly Gly Ser Gly
                       135
                                           140
Leu Val Pro Arg Gly Ser Ser Gly Ser Gly Asp Asp Asp Lys Ser
                   150
                                      155
Ser Arg Gly Ser Asp Val Arg Asp Leu Asn Ala Leu Leu Pro Ala Val
                                   170
               165
Pro Ser Leu Gly Gly Gly Gly Cys Ala Leu Pro Val Ser Gly Ala
           180
                               185
Ala Gln Trp Ala Pro Val Leu Asp Phe Ala Pro Pro Gly Ala Ser Ala
                           200
                                               205
Tyr Gly Ser Leu Gly Gly Pro Ala Pro Pro Pro Ala Pro Pro Pro
                       215
                                           220
Pro Pro Pro Pro His Ser Phe Ile Lys Gln Glu Pro Ser Trp Gly
                   230
                                       235
Gly Ala Glu Pro His Glu Glu Gln Cys Leu Ser Ala Phe Thr Val His
                                   250
Phe Ser Gly Gln Phe Thr Gly Thr Ala Gly Ala Cys Arg Tyr Gly Pro
                              265
Phe Gly Pro Pro Pro Ser Gln Ala Ser Ser Gly Gln Ala Arg Met
                           280
Phe Pro Asn Ala Pro Tyr Leu Pro Ser Cys Leu Glu Ser Gln Pro Ala
                       295
                                           300
Ile Arg Asn Gln Gly Tyr Ser Thr Val Thr Phe Asp Gly Thr Pro Ser
                   310
                                       315
Tyr Gly His Thr Pro Ser His His Ala Ala Gln Phe Pro Asn His Ser
                                   330
Phe Lys His Glu Asp Pro Met Gly Gln Gln Gly Ser Leu Gly Glu Gln
                               345
           340
Gln Tyr Ser Val Pro Pro Pro Val Tyr Gly Cys His Thr Pro Thr Asp
                           360
Ser Cys Thr Gly Ser Gln Ala Leu Leu Arg Thr Pro Tyr Ser Ser
                                           380
                       375
Asp Asn Leu Tyr Gln Met Thr Ser Gln Leu Glu Cys Met Thr Trp Asn
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Gln Met Asn Leu Gly Ala Thr Leu Lys Gly
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<211> 591

<212> PRT

<213> Homo sapiens

<400> 334

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|-----------|------------|-----------|-----|-----------|-----------|------------|------------|-----|-----------|-----------|------------|-----------|-----|-----------|-----------|
| Leu       | Val        | Asp<br>35 | Phe | Trp       | Ala       | Glu        | Trp<br>40  | Cys | Gly       | Pro       | Cys        | Lys<br>45 | Met | Ile       | Ala       |
| Pro       | Ile<br>50  | Leu       | Asp | Glu       | Ile       | Ala<br>55  | Asp        | Glu | Tyr       | Gln       | Gly<br>60  | Lys       | Leu | Thr       | Val       |
| Ala<br>65 | Lys        | Leu       | Asn | Ile       | Asp<br>70 | Gln        | Asn        | Pro | Gly       | Thr<br>75 | Ala        | Pro       | Lys | Tyr       | Gly<br>80 |
| Ile       | Arg        | Gly       | Ile | Pro<br>85 | Thr       | Leu        | Leu        | Leu | Phe<br>90 | Lys       | Asn        | Gly       | Glu | Val<br>95 | Ala       |
|           |            | _         | 100 | _         |           |            | Ser        | 105 | _         |           |            |           | 110 |           |           |
| _         |            | 115       |     |           | _         |            | Gly<br>120 |     | _         |           |            | 125       |     |           |           |
| His       | His<br>130 | His       | Val | Ser       | Ile       | Glu<br>135 | Gly        | Arg | Ala       | Ser       | Ser<br>140 | Gly       | Gly | Ser       | Gly       |
| 145       |            |           |     |           | 150       |            | Gly        |     |           | 155       |            |           |     |           | 160       |
|           |            |           |     | 165       |           |            | Arg        |     | 170       |           |            |           |     | 175       |           |
|           |            |           | 180 |           |           |            | Gly        | 185 |           |           |            |           | 190 |           |           |
|           |            | 195       |     |           |           |            | Leu<br>200 |     |           |           |            | 205       |     |           |           |
|           | 210        |           |     |           |           | 215        | Pro        |     |           |           | 220        |           |     |           |           |
| 225       |            |           |     |           | 230       |            | Ser        |     |           | 235       |            |           |     |           | 240       |
|           |            |           |     | 245       |           |            | Glu        |     | 250       |           |            |           |     | 255       |           |
|           |            |           | 260 |           |           |            | Gly        | 265 |           |           |            |           | 270 |           |           |
|           |            | 275       |     |           |           |            | Ser<br>280 |     |           |           |            | 285       |     |           |           |
|           | 290        |           |     |           |           | 295        | Leu        |     |           |           | 300        |           |     |           |           |
| 305       |            |           |     |           | 310       |            | Ser        |     |           | 315       |            |           |     |           | 320       |
|           |            |           |     | 325       |           |            | His        |     | 330       |           |            |           |     | 335       |           |
|           |            |           | 340 |           |           |            | Met        | 345 |           |           |            |           | 350 |           |           |
|           |            | 355       |     |           |           |            | Pro<br>360 |     |           |           |            | 365       |     |           |           |
|           | 370        |           |     |           |           | 375        | Ala        |     |           |           | 380        |           |     |           |           |
| 385       |            |           |     |           | 390       |            | Thr        |     |           | 395       |            |           |     |           | 400       |
|           |            |           |     | 405       |           |            | Thr        |     | 410       |           |            |           |     | 415       |           |
|           |            |           | 420 |           |           |            | Pro        | 425 |           |           |            |           | 430 |           |           |
|           |            | 435       |     |           |           |            | Arg<br>440 |     |           |           |            | 445       |     |           |           |
| Pro       | Gly        | Val       | Ala | Pro       | Thr       | Leu        | Val        | Arg | Ser       | Ala       | Ser        | Glu       | Thr | Ser       | Glu       |

450 455 460 Lys Arg Pro Phe Met Cys Ala Tyr Pro Gly Cys Asn Lys Arg Tyr Phe 470 475 Lys Leu Ser His Leu Gln Met His Ser Arg Lys His Thr Gly Glu Lys 485 490 Pro Tyr Gln Cys Asp Phe Lys Asp Cys Glu Arg Arg Phe Phe Arg Ser 505 Asp Gln Leu Lys Arg His Gln Arg Arg His Thr Gly Val Lys Pro Phe 520 Gln Cys Lys Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu Lys 540 535 Thr His Thr Arg Thr His Thr Gly Glu Lys Pro Phe Ser Cys Arg Trp 550 555 Pro Ser Cys Gln Lys Lys Phe Ala Arg Ser Asp Glu Leu Val Arg His 565 570 His Asn Met His Gln Arg Asn Met Thr Lys Leu Gln Leu Ala Leu 585

<210> 335

<211> 256

<212> PRT

<213> Homo sapiens

<400> 335

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220

250

235

255

Arg Thr Pro Tyr Ser Ser Asp Asn Leu Tyr Gln Met Thr Ser Gln Leu

Glu Cys Met Thr Trp Asn Gln Met Asn Leu Gly Ala Thr Leu Lys Gly

230

245

<212> DNA

<213> Homo sapiens

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ccgcccagcc aggcgtcatc cggccaggcc aggatgtttc ctaacgcgcc ctacctgccc 180
agetgeeteg agagecagee egetattege aateagggtt acageaeggt cacettegae 240
gggacgccca gctacggtca cacgccctcg caccatgcgg cgcagttccc caaccactca 300
ttcaagcatg aggateceat gggecageag ggetegetgg gtgageagea gtaeteggtg 360
ccgcccccgg tctatggctg ccacacccc accgacagct gcaccggcag ccaggctttg 420
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gccacettaa agggccacag cacagggtac gagagcgata accacacaac gcccatecte 180
tgcggagccc aatacagaat acacacgcac ggtgtcttca gaggcattca ggatgtgcga 240
cgtgtgcctg gagtagcccc gactcttgta cggtcggcat ctgagaccag tgagaaacgc 300
cccttcatgt gtgcttaccc aggctgcaat aagagatatt ttaagctgtc ccacttacag 360
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aggagacata caggtgtgaa accattccag tgtaaaactt gtcagcgaaa gttctcccgg 180
tecgaceace tgaagacea caccaggact catacaggtg aaaageeett cagetgtegg 240
tggccaagtt gtcagaaaaa gtttgcccgg tcagatgaat tagtccgcca tcacaacatg 300
catcagagaa acatgaccaa actccagctg gcgctttga
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actggcacag ccggagcctg tcgctacggg cccttcggtc ctcctccgcc cagccaggcg 180
teateeggee aggeeaggat gttteetaae gegeeetaee tgeeeagetg cetegagage 240
cagecegeta ttegeaatea gggttacage aeggteaeet tegaegggae geecagetae 300
ggtcacacge cetegeacca tgeggegeag tteeceaace aeteatteaa geatgaggat 360
cccatgggcc agcagggctc gctgggtgag cagcagtact cggtgccgcc cccggtctat 420
ggctgccaca ccccaccga cagctgcacc ggcagccagg ctttgctgct gaggacgccc 480
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atgaacttag gagccacctt aaagggccac agcacagggt acgagagcga taaccacaca 600
acgcccatcc tctgcggagc ccaatacaga atacacacgc acggtgtctt cagaggcatt 660
caggatgtgc gacgtgtgcc tggagtagcc ccgactcttg tacggtcggc atctgagacc 720
agtgagaaac gccccttcat gtgtgcttac ccaggctgca ataagagata ttttaagctg 780
teccaettae agatgeaeag eaggaageae aetggtgaga aaceataeea gtgtgaette 840
aaggactgtg aacgaaggtt ttttcgttca gaccagctca aaagacacca aaggagacat 900
acaggtgtga aaccattcca gtgtaaaact tgtcagcgaa agttctcccg gtccgaccac 960
ctgaagaccc acaccaggac tcatacaggt gaaaagccct tcagctgtcg gtggccaagt 1020
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<212> PRT
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Ala Leu Leu Pro Ala Val Pro Ser Leu Gly Gly Gly Gly Cys Ala
                                 25
             20
Leu Pro Val Ser Gly Ala Ala Gln Trp Ala Pro Val Leu Asp Phe Ala
Pro Pro Gly Ala Ser Ala Tyr Gly Ser Leu Gly Gly Pro Ala Pro Pro
                         55
Pro Ala Pro Pro Pro Pro Pro Pro Pro Pro His Ser Phe Ile Lys
                                         75
Gln Glu Pro Ser Trp Gly Gly Ala Glu Pro His Glu Glu Gln Cys Leu
                                     90
Ser Ala Phe
<210> 343
<211> 152
<212> PRT
<213> Homo sapiens
<400> 343
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                                     10
Phe Thr Val His Phe Ser Gly Gln Phe Thr Gly Thr Ala Gly Ala Cys
                                 25
Arg Tyr Gly Pro Phe Gly Pro Pro Pro Ser Gln Ala Ser Ser Gly
                             40
Gln Ala Arg Met Phe Pro Asn Ala Pro Tyr Leu Pro Ser Cys Leu Glu
Ser Gln Pro Ala Ile Arg Asn Gln Gly Tyr Ser Thr Val Thr Phe Asp
                     70
                                         75
Gly Thr Pro Ser Tyr Gly His Thr Pro Ser His His Ala Ala Gln Phe
                                     90
                 85
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Pro Asn His Ser Phe Lys His Glu Asp Pro Met Gly Gln Gln Gly Ser

105

110

Leu Gly Glu Gln Gln Tyr Ser Val Pro Pro Pro Val Tyr Gly Cys His 120 Thr Pro Thr Asp Ser Cys Thr Gly Ser Gln Ala Leu Leu Leu Arg Thr 135 140 Pro Tyr Ser Ser Asp Asn Leu Tyr 150 145 <210> 344 <211> 133 <212> PRT <213> Homo sapiens <400> 344 Met Gln His His His His His Gln Ala Leu Leu Arg Thr Pro 10 Tyr Ser Ser Asp Asn Leu Tyr Gln Met Thr Ser Gln Leu Glu Cys Met 25 Thr Trp Asn Gln Met Asn Leu Gly Ala Thr Leu Lys Gly His Ser Thr 40 Gly Tyr Glu Ser Asp Asn His Thr Thr Pro Ile Leu Cys Gly Ala Gln Tyr Arg Ile His Thr His Gly Val Phe Arg Gly Ile Gln Asp Val Arg 70 75 Arg Val Pro Gly Val Ala Pro Thr Leu Val Arg Ser Ala Ser Glu Thr 90 Ser Glu Lys Arg Pro Phe Met Cys Ala Tyr Pro Gly Cys Asn Lys Arg 105 Tyr Phe Lys Leu Ser His Leu Gln Met His Ser Arg Lys His Thr Gly 115 Glu Lys Pro Tyr Gln 130 <210> 345 <211> 112 <212> PRT <213> Homo sapiens <400> 345 Met Gln His His His His His His Ser Arg Lys His Thr Gly Glu 10 Lys Pro Tyr Gln Cys Asp Phe Lys Asp Cys Glu Arg Arg Phe Phe Arg Ser Asp Gln Leu Lys Arg His Gln Arg Arg His Thr Gly Val Lys Pro 40 Phe Gln Cys Lys Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu 55 Lys Thr His Thr Arg Thr His Thr Gly Glu Lys Pro Phe Ser Cys Arg 70 75 Trp Pro Ser Cys Gln Lys Lys Phe Ala Arg Ser Asp Glu Leu Val Arg 85 90

His His Asn Met His Gln Arg Asn Met Thr Lys Leu Gln Leu Ala Leu

105

110

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<211> 369
<212> PRT
<213> Homo sapiens
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                                 25
Thr Val His Phe Ser Gly Gln Phe Thr Gly Thr Ala Gly Ala Cys Arg
                             40
Tyr Gly Pro Phe Gly Pro Pro Pro Ser Gln Ala Ser Ser Gly Gln
                         55
                                             60
Ala Arg Met Phe Pro Asn Ala Pro Tyr Leu Pro Ser Cys Leu Glu Ser
                    70
                                         75
Gln Pro Ala Ile Arg Asn Gln Gly Tyr Ser Thr Val Thr Phe Asp Gly
                                     90
                 85
Thr Pro Ser Tyr Gly His Thr Pro Ser His His Ala Ala Gln Phe Pro
Asn His Ser Phe Lys His Glu Asp Pro Met Gly Gln Gln Gly Ser Leu
                            120
                                                125
Gly Glu Gln Gln Tyr Ser Val Pro Pro Pro Val Tyr Gly Cys His Thr
                        135
                                            140
Pro Thr Asp Ser Cys Thr Gly Ser Gln Ala Leu Leu Arg Thr Pro
                   150
                                        155
Tyr Ser Ser Asp Asn Leu Tyr Gln Met Thr Ser Gln Leu Glu Cys Met
                                    170
               165
Thr Trp Asn Gln Met Asn Leu Gly Ala Thr Leu Lys Gly His Ser Thr
           180
                                185
                                                    190
Gly Tyr Glu Ser Asp Asn His Thr Thr Pro Ile Leu Cys Gly Ala Gln
                            200
Tyr Arg Ile His Thr His Gly Val Phe Arg Gly Ile Gln Asp Val Arg
                        215
                                            220
Arg Val Pro Gly Val Ala Pro Thr Leu Val Arg Ser Ala Ser Glu Thr
                    230
                                        235
Ser Glu Lys Arg Pro Phe Met Cys Ala Tyr Pro Gly Cys Asn Lys Arg
                245
                                    250
Tyr Phe Lys Leu Ser His Leu Gln Met His Ser Arg Lys His Thr Gly
           260
                                265
Glu Lys Pro Tyr Gln Cys Asp Phe Lys Asp Cys Glu Arg Arg Phe Phe
                            280
Arg Ser Asp Gln Leu Lys Arg His Gln Arg Arg His Thr Gly Val Lys
                        295
                                            300
Pro Phe Gln Cys Lys Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His
Leu Lys Thr His Thr Arg Thr His Thr Gly Glu Lys Pro Phe Ser Cys
                                    330
Arg Trp Pro Ser Cys Gln Lys Lys Phe Ala Arg Ser Asp Glu Leu Val
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Arg His His Asn Met His Gln Arg Asn Met Thr Lys Leu Gln Leu Ala
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| <210> 347<br><211> 21<br><212> DNA<br><213> Artificial Sequence |    |
| <220><br><223> Primer   |    |
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| <210> 349<br><211> 21<br><212> DNA<br><213> Artificial Sequence |    |
| <220><br><223> Primer   |    |
| <400> 349 ggctccgacg tgcgggacct g                               | 21 |
| <210> 350<br><211> 30<br><212> DNA<br><213> Artificial Sequence |    |
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Ala Pro Ala Ala Ser Leu Gly Ile Ser Thr Gly Asp Val Ile Thr Ala 65 70 75 80

Val Asp Gly Ala Pro Ile Asn Ser Ala Thr Ala Met Ala Asp Ala Leu 85 90 95

Asn Gly His His Pro Gly Asp Val Ile Ser Val Thr Trp Gln Thr Lys
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Glu Pro His Glu Glu Gln Cys Leu Ser Ala Phe Thr Val His Phe Ser 145 150 155 160

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Pro Pro Pro Ser Gln Ala Ser Ser Gly Gln Ala Arg Met Phe Pro 180 185 190

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Asn Gln Gly Tyr Ser Thr Val Thr Phe Asp Gly Thr Pro Ser Tyr Gly 210 215 220

His Thr Pro Ser His His Ala Ala Gln Phe Pro Asn His Ser Phe Lys

| 225  |   |   |                         |                               | 230                            |                                |                                       |                                |                                | 235                            |                                |                                |                                |                           | 240                                   |
|--|---|---|-------------------------|-------------------------------|--------------------------------|--------------------------------|---------------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|---------------------------|---------------------------------------|
| His  | Glu                                     | Asp   | Pro                     | Met<br>245                    | Gly                            | Gln                            | Gln                                   | Gly                            | Ser<br>250                     | Leu                            | Gly                            | Glu                            | Gln                            | Gln<br>255                | Tyr                                   |
| Ser  | Val                                     | Pro   | Pro<br>260              | Pro                           | Val                            | Tyr                            | Gly                                   | Cys<br>265                     | His                            | Thr                            | Pro                            | Thr                            | Asp<br>270                     | Ser                       | Cys                                   |
| Thr  | Gly                                     | Ser<br>275                                  | Gln                     | Ala                           | Leu                            | Leu                            | Leu<br>280                            | Arg                            | Thr                            | Pro                            | Tyr                            | Ser<br>285                     | Ser                            | Asp                       | Asn                                   |
| Leu  | Туг<br>290                              | Gln   | Met                     | Thr                           | Ser                            | Gln<br>295                     | Leu                                   | Glu                            | Суѕ                            | Met                            | Thr<br>300                     | Trp                            | Asn                            | Gln                       | Met                                   |
| Asn<br>305   | Leu                                     | Gly   | Ala                     | Thr                           | Leu<br>310                     | Lys                            | Gly                                   | His                            | Ser                            | Thr<br>315                     | Gly                            | Tyr                            | Glu                            | Ser                       | Asp<br>320                            |
| Asn  | His                                     | Thr   | Thr                     | Pro<br>325                    | Ile                            | Leu                            | Суѕ                                   | Gly                            | Ala<br>330                     | Gln                            | Tyr                            | Arg                            | Ile                            | His<br>335                | Thr                                   |
| His  | Gly                                     | Val   | Phe<br>340              | Arg                           | Gly                            | Ile                            | Gln                                   |                                |                                |                                |                                |                                |                                |                           |                                       |
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| Ala        | Glu<br>130 | Phe        | Pro        | Leu        | Val        | Pro<br>135 | Arg        | Gly        | Ser        | Pro        | Met<br>140 | Gly        | Ser        | Asp        | Val        |
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| Pro        | Ala        | Pro<br>195 | Pro        | Pro        | Ala        | Pro        | Pro<br>200 | Pro        | Pro        | Pro        | Pro        | Pro<br>205 | Pro        | Pro        | His        |
| Ser        | Phe<br>210 | Ile        | Lys        | Gln        | Glu        | Pro<br>215 | Ser        | Trp        | Gly        | Gly        | Ala<br>220 | Glu        | Pro        | His        | Glu        |
| Glu<br>225 | Gln        | Cys        | Leu        | Ser        | Ala<br>230 | Phe        | Thr        | Val        | His        | Phe<br>235 | Ser        | Gly        | Gln        | Phe        | Thr<br>240 |
| Gly        | Thr        | Ala        | Gly        | Ala<br>245 | Cys        | Arg        | Tyr        | Gly        | Pro<br>250 | Phe        | Gly        | Pro        | Pro        | Pro<br>255 | Pro        |
| Ser        | Gln        | Ala        | Ser<br>260 | Ser        | Gly        | Gln        | Ala        | Arg<br>265 | Met        | Phe        | Pro        | Asn        | Ala<br>270 | Pro        | Tyr        |
| Leu        | Pro        | Ser<br>275 | Cys        | Leu        | Glu        | Ser        | Gln<br>280 | Pro        | Ala        | Ile        | Arg        | Asn<br>285 | Gln        | Gly        | Tyr        |
| Ser        | Thr<br>290 | Val        | Thr        | Phe        | Asp        | Gly<br>295 | Thr        | Pro        | Ser        | Tyr        | Gly<br>300 | His        | Thr        | Pro        | Ser        |
| His<br>305 | His        | Ala        | Ala        | Gln        | Phe<br>310 | Pro        | Asn        | His        | Ser        | Phe<br>315 | Lys        | His        | Glu        | Asp        | Pro<br>320 |
| Met        | Gly        | Gln        | Gln        | G1y<br>325 | Ser        | Leu        | Gly        | Glu        | Gln<br>330 | Gln        | Tyr        | Ser        | Val        | Pro<br>335 | Pro        |
| Pro        | Val        | Tyr        | Gly<br>340 | Cys        | His        | Thr        | Pro        | Thr<br>345 | Asp        | Ser        | Cys        | Thr        | Gly<br>350 | Ser        | Gln        |
| Ala        | Leu        | Leu<br>355 | Leu        | Arg        | Thr        | Pro        | Tyr<br>360 | Ser        | Ser        | Asp        | Asn        | Leu<br>365 | Tyr        | Gln        | Met        |
| Thr        | Ser<br>370 | Gln        | Leu        | Glu        | Cys        | Met<br>375 | Thr        | Trp        | Asn        | Gl'n       | Met<br>380 | Asn        | Leu        | Gly        | Ala        |
| Thr<br>385 | Leu        | Lys        | Gly        | His        | Ser<br>390 | Thr        | Gly        | Tyr        | Glu        | Ser<br>395 | Asp        | Asn        | His        | Thr        | Thr<br>400 |
| Pro        | Ile        | Leu        | Суѕ        | Gly<br>405 | Ala        | Gln        | Tyr        | Arg        | Ile<br>410 | His        | Thr        | His        | Gly        | Val<br>415 | Phe        |

Arg Gly Ile Gln Asp Val Arg Arg Val Pro Gly Val Ala Pro Thr Leu 420 425 430

Val Arg Ser Ala Ser Glu Thr Ser Glu Lys Arg Pro Phe Met Cys Ala 435 440 445

Tyr Pro Gly Cys Asn Lys Arg Tyr Phe Lys Leu Ser His Leu Gln Met 450 455 460

His Ser Arg Lys His Thr Gly Glu Lys Pro Tyr Gln Cys Asp Phe Lys 465 470 475 480

Asp Cys Glu Arg Arg Phe Phe Arg Ser Asp Gln Leu Lys Arg His Gln 485 490 495

Arg Arg His Thr Gly Val Lys Pro Phe Gln Cys Lys Thr Cys Gln Arg 500 505 510

Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr Arg Thr His Thr 515 520 525

Gly Glu Lys Pro Phe Ser Cys Arg Trp Pro Ser Cys Gln Lys Lys Phe 530 540

Ala Arg Ser Asp Glu Leu Val Arg His His Asn Met His Gln Arg Asn 545 550 555 560

Met Thr Lys Leu Gln Leu Ala Leu 565

<210> 393

<211> 420

<212> PRT

<213> Homo sapiens

<400> 393

Met Thr Ala Ala Ser Asp Asn Phe Gln Leu Ser Gln Gly Gln Gly 5 10 15

Phe Ala Ile Pro Ile Gly Gln Ala Met Ala Ile Ala Gly Gln Ile Lys 20 25 30

Leu Pro Thr Val His Ile Gly Pro Thr Ala Phe Leu Gly Leu Gly Val
35 40 45

Val Asp Asn Asn Gly Asn Gly Ala Arg Val Gln Arg Val Val Gly Ser
50 55 60

Ala Pro Ala Ala Ser Leu Gly Ile Ser Thr Gly Asp Val Ile Thr Ala 65 70 75 80

Val Asp Gly Ala Pro Ile Asn Ser Ala Thr Ala Met Ala Asp Ala Leu 85 90 95

Asn Gly His His Pro Gly Asp Val Ile Ser Val Thr Trp Gln Thr Lys 105 Ser Gly Gly Thr Arg Thr Gly Asn Val Thr Leu Ala Glu Gly Pro Pro 115 120 125 Ala Glu Phe Pro Leu Val Pro Arg Gly Ser Pro Met Gly Ser Asp Val 135 Arg Asp Leu Asn Ala Leu Leu Pro Ala Val Pro Ser Leu Gly Gly Gly 150 155 Gly Gly Cys Ala Leu Pro Val Ser Gly Ala Ala Gln Trp Ala Pro Val Leu Asp Phe Ala Pro Pro Gly Ala Ser Ala Tyr Gly Ser Leu Gly Gly 185 Pro Ala Pro Pro Pro Ala Pro Pro Pro Pro Pro Pro Pro Pro Pro His 195 200 205 Ser Phe Ile Lys Gln Glu Pro Ser Trp Gly Gly Ala Glu Pro His Glu Glu Gln Cys Leu Ser Ala Phe Thr Val His Phe Ser Gly Gln Phe Thr 230 235 Gly Thr Ala Gly Ala Cys Arg Tyr Gly Pro Phe Gly Pro Pro Pro Pro Ser Gln Ala Ser Ser Gly Gln Ala Arg Met Phe Pro Asn Ala Pro Tyr 265 Leu Pro Ser Cys Leu Glu Ser Gln Pro Ala Ile Arg Asn Gln Gly Tyr 275 280 285 Ser Thr Val Thr Phe Asp Gly Thr Pro Ser Tyr Gly His Thr Pro Ser His His Ala Ala Gln Phe Pro Asn His Ser Phe Lys His Glu Asp Pro 310 315 Met Gly Gln Gln Gly Ser Leu Gly Glu Gln Gln Tyr Ser Val Pro Pro 325 Pro Val Tyr Gly Cys His Thr Pro Thr Asp Ser Cys Thr Gly Ser Gln Ala Leu Leu Arg Thr Pro Tyr Ser Ser Asp Asn Leu Tyr Gln Met 360 365

Thr Ser Gln Leu Glu Cys Met Thr Trp Asn Gln Met Asn Leu Gly Ala

380

375

Thr Leu Lys Gly His Ser Thr Gly Tyr Glu Ser Asp Asn His Thr Thr 385 390 395 400

Pro Ile Leu Cys Gly Ala Gln Tyr Arg Ile His Thr His Gly Val Phe
405 410 415

Arg Gly Ile Gln 420

<210> 394

<211> 362

<212> PRT

<213> Homo sapiens

<400> 394

Met His Ser Phe Ile Lys Gln Glu Pro Ser Trp Gly Gly Ala Glu Pro 5 10 15

His Glu Glu Gln Cys Leu Ser Ala Phe Thr Val His Phe Ser Gly Gln 20 25 30

Phe Thr Gly Thr Ala Gly Ala Cys Arg Tyr Gly Pro Phe Gly Pro Pro 35 40 45

Pro Pro Ser Gln Ala Ser Ser Gly Gln Ala Arg Met Phe Pro Asn Ala 50 55 60

Pro Tyr Leu Pro Ser Cys Leu Glu Ser Gln Pro Ala Ile Arg Asn Gln 65 70 75 80

Gly Tyr Ser Thr Val Thr Phe Asp Gly Thr Pro Ser Tyr Gly His Thr 85 90 95

Pro Ser His His Ala Ala Gln Phe Pro Asn His Ser Phe Lys His Glu 100 105 110

Asp Pro Met Gly Gln Gln Gly Ser Leu Gly Glu Gln Gln Tyr Ser Val 115 120 125

Pro Pro Pro Val Tyr Gly Cys His Thr Pro Thr Asp Ser Cys Thr Gly 130 135 140

Ser Gln Ala Leu Leu Leu Arg Thr Pro Tyr Ser Ser Asp Asn Leu Tyr 145 150 155 160

Gln Met Thr Ser Gln Leu Glu Cys Met Thr Trp Asn Gln Met Asn Leu 165 170 175

Gly Ala Thr Leu Lys Gly His Ser Thr Gly Tyr Glu Ser Asp Asn His 180 185 190

Thr Thr Pro Ile Leu Cys Gly Ala Gln Tyr Arg Ile His Thr His Gly

|              |                                  | 195        |            |            |            |            | 200        |            |            |            |            | 205        |            |            |            |
|--------------|----------------------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| Val          | Phe<br>210                       | Arg        | Gly        | Ile        | Gln        | Asp<br>215 | Val        | Arg        | Arg        | Val        | Pro<br>220 | Gly        | Val        | Ala        | Pro        |
| Thr<br>225   | Leu                              | Val        | Arg        | Ser        | Ala<br>230 | Ser        | Glu        | Thr        | Ser        | Glu<br>235 | Lys        | Arg        | Pro        | Phe        | Met<br>240 |
| Суз          | Ala                              | Tyr        | Pro        | Gly<br>245 | Cys        | Asn        | Lys        | Arg        | Tyr<br>250 | Phe        | Lys        | Leu        | Ser        | His<br>255 | Leu        |
| Gln          | Met                              | His        | Ser<br>260 | Arg        | Lys        | His        | Thr        | Gly<br>265 | Glu        | Lys        | Pro        | Tyr        | Gln<br>270 | Cys        | Asp        |
| Phe          | Lys                              | Asp<br>275 | Cys        | Glu        | Arg        | Arg        | Phe<br>280 | Phe        | Arg        | Ser        | Asp        | Gln<br>285 | Leu        | Lys        | Arg        |
| His          | Gln<br>290                       | Arg        | Arg        | His        | Thr        | Gly<br>295 | Val        | Lys        | Pro        | Phe        | Gln<br>300 | Cys        | Lys        | Thr        | Cys        |
| Gln<br>305   | Arg                              | Lys        | Phe        | Ser        | Arg<br>310 | Ser        | Asp        | His        | Leu        | Lys<br>315 | Thr        | His        | Thr        | Arg        | Thr<br>320 |
| His          | Thr                              | Gly        | Glu        | Lys<br>325 | Pro        | Phe        | Ser        | Cys        | Arg<br>330 | Trp        | Pro        | Ser        | Cys        | Gln<br>335 | Lys        |
| Lys          | Phe                              | Ala        | Arg<br>340 | Ser        | Asp        | Glu        | Leu        | Val<br>345 | Arg        | His        | His        | Asn        | Met<br>350 | His        | Gln        |
| Arg          | Asn                              | Met<br>355 | Thr        | Lys        | Leu        | Gln        | Leu<br>360 | Ala        | Leu        |            |            |            |            |            |            |
| <211<br><212 | )> 39<br>L> 21<br>2> PF<br>3> Ho | L 4<br>RT  | sapie      | ens        |            |            |            |            |            |            |            |            |            |            |            |
|              | )> 39<br>His                     |            | Phe        | Ile<br>5   | Lys        | Gln        | Glu        | Pro        | Ser<br>10  | Trp        | Gly        | Gly        | Ala        | Glu<br>15  | Pro        |
| His          | Glu                              | Glu        | Gln<br>20  | Cys        | Leu        | Ser        | Ala        | Phe<br>25  | Thr        | Val        | His        | Phe        | Ser<br>30  | Gly        | Gln        |
| Phe          | Thr                              | Gly<br>35  | Thr        | Ala        | Gly        | Ala        | Cys<br>40  | Arg        | Tyr        | Gly        | Pro        | Phe<br>45  | Gly        | Pro        | Pro        |
| Pro          | Pro<br>50                        | Ser        | Gln        | Ala        | Ser        | Ser<br>55  | Gly        | Gln        | Ala        | Arg        | Met<br>60  | Phe        | Pro        | Asn        | Ala        |
| Pro-         |                                  | Leu        | Pro        | Ser        | Cys<br>70  | Leu        | Glu        | Ser        | Gln        | Pro<br>75  | Ala        | Ile        | Arg        | Asn        | Gln<br>80  |

```
Gly Tyr Ser Thr Val Thr Phe Asp Gly Thr Pro Ser Tyr Gly His Thr
                                     90
Pro Ser His His Ala Ala Gln Phe Pro Asn His Ser Phe Lys His Glu
                                105
Asp Pro Met Gly Gln Gln Gly Ser Leu Gly Glu Gln Gln Tyr Ser Val
        115
                            120
Pro Pro Pro Val Tyr Gly Cys His Thr Pro Thr Asp Ser Cys Thr Gly
                        135
Ser Gln Ala Leu Leu Arg Thr Pro Tyr Ser Ser Asp Asn Leu Tyr
                    150
                                        155
Gln Met Thr Ser Gln Leu Glu Cys Met Thr Trp Asn Gln Met Asn Leu
                                    170
                165
Gly Ala Thr Leu Lys Gly His Ser Thr Gly Tyr Glu Ser Asp Asn His
                                185
Thr Thr Pro Ile Leu Cys Gly Ala Gln Tyr Arg Ile His Thr His Gly
Val Phe Arg Gly Ile Gln
    210
<210> 396
<211> 30
<212> DNA
<213> Artificial Sequence
<220>
<223> PCR primer
<400> 396
                                                                   30
gacgaaagca tatgcactcc ttcatcaaac
<210> 397
<211> 31
<212> DNA
<213> Artificial Sequence
<220>
<223> PCR primer
<400> 397
                                                                   31
cgcgtgaatt catcactgaa tgcctctgaa g
<210> 398
<211> 31
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<212> DNA

| <213> Artificial Sequence                                       |    |
|---|----|
| <220><br><223> PCR primer                                       |    |
| <400> 398 cgataagcat atgacggccg cgtccgataa c                    | 31 |
| <210> 399<br><211> 31<br><212> DNA<br><213> Artificial Sequence |    |
| <220><br><223> PCR primer                                       |    |
| <400> 399<br>cgcgtgaatt catcactgaa tgcctctgaa g                 | 31 |
| <210> 400<br><211> 31<br><212> DNA<br><213> Artificial Sequence |    |
| <220><br><223> PCR primer                                       |    |
| <400> 400<br>cgataagcat atgacggccg cgtccgataa c                 | 31 |
| <210> 401<br><211> 28<br><212> DNA<br><213> Artificial Sequence |    |
| <220><br><223> PCR primer                                       |    |
| <400> 401<br>gtctgcagcg gccgctcaaa gcgccagc                     | 28 |
| <210> 402<br><211> 30<br><212> DNA<br><213> Artificial Sequence |    |
| <220><br><223> PCR primer                                       |    |
| <400> 402<br>gacgaaagca tatgcactcc ttcatcaaac                   | 30 |
| <210> 403<br><211> 28   |    |

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<212> DNA
<213> Artificial Sequence
<220>
<223> PCR primer
<400> 403
                                                                   28
gtctgcagcg gccgctcaaa gcgccagc
<210> 404
<211> 449
<212> PRT
<213> Homo sapiens
<400> 404
Met Gly Ser Asp Val Arg Asp Leu Asn Ala Leu Leu Pro Ala Val Pro
                                    10
Ser Leu Gly Gly Gly Gly Cys Ala Leu Pro Val Ser Gly Ala Ala
                                25
Gln Trp Ala Pro Val Leu Asp Phe Ala Pro Pro Gly Ala Ser Ala Tyr
Gly Ser Leu Gly Gly Pro Ala Pro Pro Pro Ala Pro Pro Pro Pro
                        55
                                            60
Pro Pro Pro Pro His Ser Phe Ile Lys Gln Glu Pro Ser Trp Gly Gly
Ala Glu Pro His Glu Glu Gln Cys Leu Ser Ala Phe Thr Val His Phe
                                    90
Ser Gly Gln Phe Thr Gly Thr Ala Gly Ala Cys Arg Tyr Gly Pro Phe
                                105
            100
Gly Pro Pro Pro Ser Gln Ala Ser Ser Gly Gln Ala Arg Met Phe
                            120
                                                125
Pro Asn Ala Pro Tyr Leu Pro Ser Cys. Leu Glu Ser Gln Pro Ala Ile
                                            140
Arg Asn Gln Gly Tyr Ser Thr Val Thr Phe Asp Gly Thr Pro Ser Tyr
                                        155
                                                             160
Gly His Thr Pro Ser His His Ala Ala Gln Phe Pro Asn His Ser Phe
                                    170
                165
Lys His Glu Asp Pro Met Gly Gln Gln Gly Ser Leu Gly Glu Gln Gln
                                185
Tyr Ser Val Pro Pro Pro Val Tyr Gly Cys His Thr Pro Thr Asp Ser
                            200
                                                205
Cys Thr Gly Ser Gln Ala Leu Leu Leu Arg Thr Pro Tyr Ser Ser Asp
                                            220
                        215
Asn Leu Tyr Gln Met Thr Ser Gln Leu Glu Cys Met Thr Trp Asn Gln
                                        235
                    230
Met Asn Leu Gly Ala Thr Leu Lys Gly Val Ala Ala Gly Ser Ser Ser
                                    250
Ser Val Lys Trp Thr Glu Gly Gln Ser Asn His Ser Thr Gly Tyr Glu
                                265
                                                    270
            260
Ser Asp Asn His Thr Thr Pro Ile Leu Cys Gly Ala Gln Tyr Arg Ile
                            280
His Thr His Gly Val Phe Arg Gly Ile Gln Asp Val Arg Arg Val Pro
```

295

```
Gly Val Ala Pro Thr Leu Val Arg Ser Ala Ser Glu Thr Ser Glu Lys
                    310
Arg Pro Phe Met Cys Ala Tyr Pro Gly Cys Asn Lys Arg Tyr Phe Lys
                                    330
                325
Leu Ser His Leu Gln Met His Ser Arg Lys His Thr Gly Glu Lys Pro
                                345
Tyr Gln Cys Asp Phe Lys Asp Cys Glu Arg Arg Phe Ser Arg Ser Asp
                            360
Gln Leu Lys Arg His Gln Arg Arg His Thr Gly Val Lys Pro Phe Gln
                        375
Cys Lys Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu Lys Thr
                    390
                                        395
His Thr Arg Thr His Thr Gly Lys Thr Ser Glu Lys Pro Phe Ser Cys
                405
                                    410
Arg Trp Pro Ser Cys Gln Lys Lys Phe Ala Arg Ser Asp Glu Leu Val
                                425
                                                    430
Arg His His Asn Met His Gln Arg Asn Met Thr Lys Leu Gln Leu Ala
                            440
Leu
```

<210> 405 <211> 428 <212> PRT <213> Homo sapiens

<400> 405

Met Gly Ser Asp Val Arg Asp Leu Asn Ala Leu Leu Pro Ala Val Pro Ser Pro Gly Gly Gly Gly Cys Ala Leu Pro Val Ser Gly Ala Thr 2.0 25 Gln Trp Ala Pro Val Leu Asp Phe Val Pro Pro Gly Ala Pro Val Cys 45 Gly Ser Leu Gly Gly Pro Ala Pro Pro Pro Ala Pro Pro Pro Leu Pro Pro Pro Pro Ser His Ser Phe Thr Lys Gln Glu Pro Ser Trp Gly Gly 70 75 Thr Glu Pro His Ala Gly Gln Gly Arg Ser Ala Leu Val Ala His Ser 90 Ser Gly Gln Phe Thr Gly Thr Ala Gly Ala Cys Arg Tyr Gly Pro Phe 105 Gly Pro Pro Pro Ser Gln Ala Ser Ser Gly Gln Ala Arg Met Phe 120 Pro Asn Ala Pro Tyr Leu Pro Ser Cys Leu Glu Ser Gln Pro Ala Ile 135 140 Arg Asn Gln Gly Tyr Ser Thr Val Thr Phe Asp Gly Thr Pro Ser Tyr 150 155 Gly His Thr Pro Ser His His Ala Ala Gln Phe Pro Asn His Ser Ser 165 170 Lys His Glu Asp Pro Met Gly Gln Gln Gly Ser Pro Gly Glu Gln Gln 185 190 Tyr Ser Ala Pro Pro Pro Val Cys Gly Cys Arg Thr Pro Thr Gly Ser 200 205

Cys Thr Gly Ser Gln Ala Leu Leu Leu Arg Ala Pro Tyr Ser Gly Gly

Asp Leu His Gln Thr Thr Ser Gln Leu Gly His Met Ala Trp Asn Gln

```
230
                                        235
Thr Asn Leu Gly Ala Thr Leu Lys Gly His Gly Thr Gly Tyr Glu Ser
                245
                                    250
Asp Asp His Thr Thr Pro Ile Leu Cys Gly Thr Gln Tyr Arg Ile Arg
                                265
                                                     270
Ala Arg Gly Val Leu Arg Gly Thr Gln Asp Val Arg Cys Val Pro Gly
                            280
                                                 285
Val Ala Pro Thr Leu Val Arg Ser Ala Ser Glu Thr Ser Glu Lys Arg
                        295
Pro Leu Met Cys Ala Tyr Pro Gly Cys Asn Lys Arg His Phe Lys Pro
                    310
                                        315
Ser Arg Leu Arg Val Arg Gly Arg Glu Arg Thr Gly Glu Lys Pro Tyr
                325
                                    330
Gln Arg Asp Phe Lys Asp Arg Gly Arg Gly Leu Leu Arg Pro Asp Gln
                                345
Leu Lys Arg His Gln Arg Gly His Thr Gly Val Lys Pro Leu Gln Cys
                            360
                                                365
Glu Ala Arg Arg Arg Pro Pro Arg Pro Gly His Leu Lys Val His Thr
Arg Thr His Thr Gly Gly Glu Pro Phe Ser Cys Arg Trp Pro Ser Cys
                    390
                                        395
Gln Glu Lys Ser Ala Arg Pro Asp Glu Ser Ala Arg Arg His Asn Met
                                    410
His Gln Arg Asn Met Thr Lys Leu Gln Leu Ala Leu
            420
                                425
<210> 406
<211> 414
<212> PRT
<213> Homo sapiens
<220>
<221> VARIANT
<222> 85, 86, 172, 173, 242, 245, 246, 247
<223> Xaa = Any Amino Acid
Met Gly Ser Asp Val Arg Asp Leu Ser Ala Leu Leu Pro Ala Val Pro
                                    10
Ser Leu Gly Asp Gly Gly Cys Ala Leu Pro Val Ser Gly Ala Ala
                                25
Gln Trp Ala Pro Val Leu Asp Phe Ala Pro Pro Gly Ala Ser Ala His
                            40
                                                45
Gly Pro Leu Gly Gly Pro Ala Pro Pro Ser Ala Pro Pro Pro Pro Pro
                        55
Pro Pro Pro Pro His Ser Phe Ile Lys Gln Gly Pro Ser Trp Gly Gly
Ala Glu Leu His Xaa Xaa Gln Tyr Leu Ser Ala Phe Thr Val His Ser
                                    90
Ser Gly Gln Val His Trp His Gly Arg Gly Leu Ser Leu Arg Ala Pro
```

```
100
                                105
                                                    110
Arg Pro Pro Ser Ala Gln Pro Gly Val Ile Arg Pro Gly Gln Asp Val
       115
                            120
                                               125
Ser Arg Ala Leu Pro Ala Gln Pro Pro Arg Glu Pro Ala Arg Tyr Pro
                        135
Gln Ser Gly Leu Gln His Gly His Leu Arg Arg Gly Val Arg Leu Arg
                                        155
                    150
Ser His Ala Leu Ala Pro Cys Gly Ala Val Leu Xaa Xaa Thr Arg Ala
               165
                                    170
Gly Ser His Gly Pro Ala Gly Ser Ala Gly Ala Ala Val Leu Gly Ala
           180
                                185
Ala Pro Gly Leu Trp Pro Pro His Pro Arg Arg Gln Leu Arg Arg Gln
                            200
Pro Gly Phe Ala Ala Glu Gly Ala Leu Gln Arg Arg Phe Ile Pro Ser
                        215
Asp Val Pro Ala Val His Gly Leu Glu Ser Asp Glu Pro Arg Gly Arg
                    230
                                        235
Leu Xaa Gly Pro Xaa Xaa Xaa Val Arg Glu Arg Ser His Asn Ala Arg
                                    250
Pro Leu Arg Ser Pro Ile Gln Asn Thr His Ala Arg Cys Leu Gln Gly
            260
                                265
Arg Ser Gly Cys Ala Pro Cys Ala Trp Ser Ser Pro Asp Ser Cys Thr
                            280
Val Gly Ile Gly Gln Gly Thr Pro Pro His Val Cys Leu Pro Arg Leu
                        295
                                            300
Gln Glu Val Ser Glu Ala Ala Pro Leu Thr Asp Ala Arg Glu Ala Arg
                    310
                                        315
Trp Glu Thr Ile Pro Val Leu Gln Gly Leu Trp Thr Glu Val Phe Leu
               325
                                    330
Leu Arg Pro Ala Gln Lys Thr Pro Gly Glu Ala Tyr Arg Cys Glu Ala
                                                    350
           340
                                345
Ile Pro Ala Asp Leu Ser Ala Arg Val Leu Pro Ala Gln Pro Pro Glu
                            360
                                                365
Asp Pro Arg Gln Asp Ser Cys Arg Lys Ala Pro Gln Leu Ser Val Val
                        375
                                            380
Arg Leu Ser Glu Lys Ala Cys Pro Val Lys Val Gly Pro Pro Ser Arg
                    390
His Ala Ser Glu Gly His Asp Arg Thr Pro Ala Gly Ala Leu
               405
```

<210> 407

<211> 417

<212> PRT

<213> Homo sapiens

<400> 407

```
55
Pro Pro Pro Pro His Ser Cys Gly Glu Gln Gly Pro Ser Trp Gly Gly
                   70
                                       75
Ala Glu Pro Arg Glu Gly Gln Cys Leu Ser Ala Pro Ala Val Arg Phe
                                   90
Ser Gly Arg Phe Thr Gly Thr Val Gly Ala Cys Arg Tyr Gly Pro Leu
                                105
Gly Pro Pro Pro Pro Ser Gln Ala Pro Ser Gly Gln Thr Arg Met Leu
                           120
Pro Ser Ala Pro Tyr Leu Ser Ser Cys Leu Arg Ser Arg Ser Ala Ile
                       135
                                           140
Arg Ser Gln Gly Arg Ser Thr Ala Pro Ser Ala Gly Arg Pro Ala Met
                   150
                                       155
Ala Pro Thr Leu Ala Pro Pro Ala Gln Ser His Tyr Ser Gln His Gly
                                   170
Val Leu His Gly Pro Ala Gly Leu Ala Gly Ala Ala Val Leu Gly Ala
                               185
           180
Ala Pro Gly Leu Trp Leu Pro His Pro His Arg Gln Leu His Arg Gln
                           200
Pro Gly Phe Ala Ala Glu Asp Ala Leu Gln Gln Phe Ile Pro Asn
                                           220
                       215
Asp Ile Pro Ala Met His Asp Leu Glu Ser Asp Glu Leu Arg Ser His
                   230
Leu Lys Gly Pro Gln His Arg Val Arg Glu Arg Pro His Asn Ala His
    245
                                   250
Pro Leu Arg Ser Pro Ile Gln Asn Thr His Ala Arg Cys Leu Gln Arg
                               265
His Ser Gly Cys Ala Thr Cys Ala Trp Ser Ser Pro Asp Ser Cys Thr
                           280
                                               285
Val Ala Pro Glu Thr Ser Glu Asn Ala Pro Trp Cys Val Leu Pro Gly
                       295
                                           300
Leu Gln Gly Val Phe Ala Val Pro Leu Thr Gly Ala Gln Glu Ala
                   310
                                       315
His Trp Asp Ala Thr Pro Val Arg Leu Gln Gly Pro Trp Thr Arg Ala
                                   330
               325
Ser Pro Phe Gly Thr Ser Pro Arg Asp Thr Lys Gly Asp Ile Gln Val
                                345
Arg Asn His Ser Ser Val Arg Leu Val Ser Glu Gly Ser Pro Gly Pro
                            360
Thr Thr Gly Pro Thr Pro Gly Pro Thr Arg Val Gly Ser Pro Ser Ala
                       375
Ala Gly Gly Gln Ala Ala Arg Glu Gly Ser Pro Ser Gln Thr Asn Ser
                   390
                                       395
Val Ile Thr Thr Cys Ile Ser Glu Thr Leu Asn Ser Ser Trp Arg Phe
                                    410
               405
Glu
```

<sup>&</sup>lt;210> 408

<sup>&</sup>lt;211> 429

<sup>&</sup>lt;212> PRT

<sup>&</sup>lt;213> Homo sapiens

```
<400> 408
Met Gly Ser Asp Val Arg Asp Leu Asn Ala Leu Leu Pro Ala Val Pro
                                    10
Ser Leu Gly Gly Gly Gly Cys Ala Leu Pro Val Ser Gly Ala Ala
Gln Trp Ala Pro Val Leu Asp Phe Ala Pro Pro Gly Ala Ser Ala Tyr
Gly Ser Leu Gly Gly Pro Ala Pro Pro Pro Ala Pro Pro Pro Pro
                        55
Pro Pro Pro Pro His Ser Phe Ile Lys Gln Glu Pro Ser Trp Gly Gly
                   70
                                        75
Ala Glu Pro His Glu Glu Gln Cys Leu Ser Ala Phe Thr Val His Phe
                                    90
                85
Ser Gly Gln Phe Thr Gly Thr Ala Gly Ala Cys Arg Tyr Gly Pro Phe
            100
                                105
Gly Pro Pro Pro Pro Ser Gln Ala Ser Ser Gly Gln Ala Arg Met Phe
                            120
                                               125
Pro Asn Ala Pro Tyr Leu Pro Ser Cys Leu Glu Ser Gln Pro Ala Ile
                        135
                                            140
Arg Asn Gln Gly Tyr Ser Thr Val Thr Phe Asp Gly Thr Pro Ser Tyr
                    150
                                        155
Gly His Thr Pro Ser His His Ala Ala Gln Phe Pro Asn His Ser Phe
                165
                                    170
Lys His Glu Asp Pro Met Gly Gln Gln Gly Ser Leu Gly Glu Gln Gln
                               185
Tyr Ser Val Pro Pro Pro Val Tyr Gly Cys His Thr Pro Thr Asp Ser
                            200
Cys Thr Gly Ser Gln Ala Leu Leu Leu Arg Thr Pro Tyr Ser Ser Asp
                        215
                                            220
Asn Leu Tyr Gln Met Thr Ser Gln Leu Glu Cys Met Thr Trp Asn Gln
                    230
                                        235
Met Asn Leu Gly Ala Thr Leu Lys Gly His Ser Thr Gly Tyr Glu Ser
                                    250
Asp Asn His Thr Thr Pro Ile Leu Cys Gly Ala Gln Tyr Arg Ile His
                                265
            260
Thr His Gly Val Phe Arg Gly Ile Gln Asp Val Arg Arg Val Pro Gly
Val Ala Pro Thr Leu Val Arg Ser Ala Ser Glu Thr Ser Glu Lys Arg
                                            300
                        295
Pro Phe Met Cys Ala Tyr Pro Gly Cys Asn Lys Arg Tyr Phe Lys Leu
                   310
                                        315
Ser His Leu Gln Met His Ser Arg Lys His Thr Gly Glu Lys Pro Tyr
                                    330
                325
Gln Cys Asp Phe Lys Asp Cys Glu Arg Arg Phe Phe Arg Ser Asp Gln
            340
                                345
Leu Lys Arg His Gln Arg Arg His Thr Gly Val Lys Pro Phe Gln Cys
                            360
                                               365
Lys Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu Lys Thr His
                        375
Thr Arg Thr His Thr Gly Glu Lys Pro Phe Ser Cys Arg Trp Pro Ser
                    390
                                        395
Cys Gln Lys Lys Phe Ala Arg Ser Asp Glu Leu Val Arg His His Asn
                                    410
Met His Gln Arg Asn Met Thr Lys Leu Gln Leu Ala Leu
```

```
<210> 409
<211> 495
<212> PRT
<213> Homo sapiens
<400> 409
Met Ala Ala Pro Gly Ala Arg Arg Ser Leu Leu Leu Leu Leu Ala
                                    10
Gly Leu Ala His Gly Ala Ser Ala Leu Phe Glu Asp Leu Met Gly Ser
                                25
Asp Val Arg Asp Leu Asn Ala Leu Leu Pro Ala Val Pro Ser Leu Gly
                            40
Gly Gly Gly Cys Ala Leu Pro Val Ser Gly Ala Ala Gln Trp Ala
                        55
Pro Val Leu Asp Phe Ala Pro Pro Gly Ala Ser Ala Tyr Gly Ser Leu
                   70
                                        75
Gly Gly Pro Ala Pro Pro Pro Ala Pro Pro Pro Pro Pro Pro Pro Pro His
                                    90
Ser Phe Ile Lys Gln Glu Pro Ser Trp Gly Gly Ala Glu Pro His Glu
                                105
Glu Gln Cys Leu Ser Ala Phe Thr Val His Phe Ser Gly Gln Phe Thr
     115
                            120
                                                125
Gly Thr Ala Gly Ala Cys Arg Tyr Gly Pro Phe Gly Pro Pro Pro Pro
                        135
                                            140
Ser Gln Ala Ser Ser Gly Gln Ala Arg Met Phe Pro Asn Ala Pro Tyr
                    150
                                        155
Leu Pro Ser Cys Leu Glu Ser Gln Pro Ala Ile Arg Asn Gln Gly Tyr
                165
                                    170
                                                        175
Ser Thr Val Thr Phe Asp Gly Thr Pro Ser Tyr Gly His Thr Pro Ser
            180
                                185
His His Ala Ala Gln Phe Pro Asn His Ser Phe Lys His Glu Asp Pro
                            200
Met Gly Gln Gln Gly Ser Leu Gly Glu Gln Gln Tyr Ser Val Pro Pro
                        215
                                            220
Pro Val Tyr Gly Cys His Thr Pro Thr Asp Ser Cys Thr Gly Ser Gln
                                        235
                    230
Ala Leu Leu Arg Thr Pro Tyr Ser Ser Asp Asn Leu Tyr Gln Met
                                    250
Thr Ser Gln Leu Glu Cys Met Thr Trp Asn Gln Met Asn Leu Gly Ala
           260
                                265
Thr Leu Lys Gly His Ser Thr Gly Tyr Glu Ser Asp Asn His Thr Thr
                            280
Pro Ile Leu Cys Gly Ala Gln Tyr Arg Ile His Thr His Gly Val Phe
                        295
                                            300
Arg Gly Ile Gln Asp Val Arg Arg Val Pro Gly Val Ala Pro Thr Leu
                    310
                                        315
Val Arg Ser Ala Ser Glu Thr Ser Glu Lys Arg Pro Phe Met Cys Ala
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Tyr Pro Gly Cys Asn Lys Arg Tyr Phe Lys Leu Ser His Leu Gln Met
                                345
His Ser Arg Lys His Thr Gly Glu Lys Pro Tyr Gln Cys Asp Phe Lys
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355
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Asp Cys Glu Arg Arg Phe Phe Arg Ser Asp Gln Leu Lys Arg His Gln
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Arg Arg His Thr Gly Val Lys Pro Phe Gln Cys Lys Thr Cys Gln Arg
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                                        395
Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr Arg Thr His Thr
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                                    410
Gly Glu Lys Pro Phe Ser Cys Arg Trp Pro Ser Cys Gln Lys Lys Phe
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Ala Arg Ser Asp Glu Leu Val Arg His His Asn Met His Gln Arg Asn
                            440
Met Thr Lys Leu Gln Leu Ala Leu Leu Asn Asn Met Leu Ile Pro Ile
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                                            460
Ala Val Gly Gly Ala Leu Ala Gly Leu Val Leu Ile Val Leu Ile Ala
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Tyr Leu Ile Gly Arg Lys Arg Ser His Ala Gly Tyr Gln Thr Ile
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Lys Glu Gly Ile Pro Pro Asp Gln Gln Arg Leu Ile Phe Ala Gly Lys
                            40
                                                45
Gln Leu Glu Asp Gly Arg Thr Leu Ser Asp Tyr Asn Ile Gln Lys Glu
Ser Thr Leu His Leu Val Leu Arg Leu Arg Gly Ala Met Gly Ser Asp
                    70
                                        75
Val Arg Asp Leu Asn Ala Leu Leu Pro Ala Val Pro Ser Leu Gly Gly
Gly Gly Cys Ala Leu Pro Val Ser Gly Ala Ala Gln Trp Ala Pro
           100
                               105
Val Leu Asp Phe Ala Pro Pro Gly Ala Ser Ala Tyr Gly Ser Leu Gly
                            120
Gly Pro Ala Pro Pro Pro Ala Pro Pro Pro Pro Pro Pro Pro Pro Pro His
                        135
                                            140
Ser Phe Ile Lys Gln Glu Pro Ser Trp Gly Gly Ala Glu Pro His Glu
                    150
                                        155
Glu Gln Cys Leu Ser Ala Phe Thr Val His Phe Ser Gly Gln Phe Thr
                165
                                    170
Gly Thr Ala Gly Ala Cys Arg Tyr Gly Pro Phe Gly Pro Pro Pro
                                185
Ser Gln Ala Ser Ser Gly Gln Ala Arg Met Phe Pro Asn Ala Pro Tyr
Leu Pro Ser Cys Leu Glu Ser Gln Pro Ala Ile Arg Asn Gln Gly Tyr
                        215
                                            220
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Ser Thr Val Thr Phe Asp Gly Thr Pro Ser Tyr Gly His Thr Pro Ser

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225
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                                       235
His His Ala Ala Gln Phe Pro Asn His Ser Phe Lys His Glu Asp Pro
                245
                                    250
Met Gly Gln Gln Gly Ser Leu Gly Glu Gln Gln Tyr Ser Val Pro Pro
                               265
Pro Val Tyr Gly Cys His Thr Pro Thr Asp Ser Cys Thr Gly Ser Gln
                            280
                                                285
Ala Leu Leu Leu Arg Thr Pro Tyr Ser Ser Asp Asn Leu Tyr Gln Met
                                            300
                        295
Thr Ser Gln Leu Glu Cys Met Thr Trp Asn Gln Met Asn Leu Gly Ala
                   310
                                       315
Thr Leu Lys Gly His Ser Thr Gly Tyr Glu Ser Asp Asn His Thr Thr
               325
                                    330
Pro Ile Leu Cys Gly Ala Gln Tyr Arg Ile His Thr His Gly Val Phe
                                345
Arg Gly Ile Gln Asp Val Arg Arg Val Pro Gly Val Ala Pro Thr Leu
                           360
                                                365
Val Arg Ser Ala Ser Glu Thr Ser Glu Lys Arg Pro Phe Met Cys Ala
                       375
                                            380
Tyr Pro Gly Cys Asn Lys Arg Tyr Phe Lys Leu Ser His Leu Gln Met
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                                        395
His Ser Arg Lys His Thr Gly Glu Lys Pro Tyr Gln Cys Asp Phe Lys
                                    410
Asp Cys Glu Arg Arg Phe Phe Arg Ser Asp Gln Leu Lys Arg His Gln
           420
                                425
Arg Arg His Thr Gly Val Lys Pro Phe Gln Cys Lys Thr Cys Gln Arg
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Lys Phe Ser Arg Ser Asp His Leu Lys Thr His Thr Arg Thr His Thr
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